EHD700 / 730 960H Series

Day/Night Vandal Dome Camera

User's Manual

EverFocus®

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Release Date: April, 2014

Precautions

1. **Do not install the camera near electric or magnetic fields.** Install the camera away from TV/radio transmitters, magnets, electric motors, transformers and audio speakers since the electromagnetic fields generated from these devices may distort the video image or otherwise interfere with camera operation.
2. **Never disassemble the camera beyond the recommendations in this manual nor introduce materials other than those recommended herein.** Improper disassembly or introduction of corrosive materials may result in equipment failure or other damage.
3. **Try to avoid facing the camera toward the sun**. In some circumstances, direct sunlight may cause permanent damage to the sensor and/or internal circuits, as well as creating unbalanced illumination beyond the capability of the camera to compensate.
4. **Keep the power cable away from water and other liquids and never touch the power cord with wet hands.** Touching a wet power cord with your hands or touching the power cord with wet hands may result in electric shock.
5. **Never install the camera in areas exposed to oil, gas or solvents.** Oil, gas or solvents may result in equipment failure, electric shock or, in extreme cases, fire.
6. **Cleaning.** For cameras with interchangeable lenses, do not touch the surface of the sensor directly with the hands. Use lens tissue or a cotton tipped applicator and ethanol to clean the sensor and the camera lens. Use a damp soft cloth to remove any dirt from the camera body. Please do not use complex solvents, corrosive or abrasive agents for cleaning of any part of the camera.
7. **Do not operate the camera beyond the specified temperature, humidity or power source ratings.** This camera is suitable for indoor operation only. Use the camera at temperatures within -40°C~50°C (-40°F~122°F) and humidity between 20%~ 80%; this device is not rated as submersible. The input power source is 12VDC or 24VAC. Be sure to connect the proper + / - polarity and voltage, as incorrect polarity or too high a voltage will likely cause the camera to fail, and such damage is not covered by the warranty.
8. **Mounting.** Use care in selecting a solid mounting surface which will support the weight of the camera plus any wind, snow, ice or other loading, and securely attach the camera to the mounting surface using screws and anchors which will properly support the camera. If necessary (e.g. when mounting to drop ceilings) use a safety wire to provide additional support for the camera.

Safety Notice

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CE

ATTENTION! This is a class A product which may cause radio interference in a domestic environment; in this case, the user may be urged to take adequate measures.

RoHS

This Product is RoHS compliant.

WEEE

Your EverFocus product is designed and manufactured with high quality materials and components which can be recycled and reused. This symbol means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from your household waste. Please, dispose of this equipment at your local community waste collection/recycling centre. In the European Union there are separate collection systems for used electrical and electronic product.
Please, help us to conserve the environment we live in!

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1. Introduction

i. EHD700

Get incredible performance in bright light or low light, and the resolution listed in the specs from the actual camera you install. To take full advantage of the amazing resolution available from this advanced imaging technology, the EverFocus 960H Series EHD700 uses a vari-focal lens together with SONY Exview HAD 960H CCD II to produce in excess of 720 horizontal TV lines of resolution from each and 960H Series camera we deliver. Combined with a useable native low light sensitivity of 0.05lux without using digital slow shutter, this camera truly provides color without compromise: over 720TVL resolution, Digital Wide Dynamic Range for clear color images in the most challenging of bright or unbalanced scene lighting conditions, plus day/night in low light with guaranteed ZERO ghosting. The EHD700 with its 3 Axis rotation design allows wall or ceiling mounting flexibility in an **IP66 weather resistant, vandal proof dome** housing. Your choice of vari-focal 2.8~12mm DC iris lens for easily adjustable field of view; Dual voltage operation and a full suite of OSD Menu and DSP functions controllable at the camera (DNR to save DVR HDD space, privacy masking, mirroring, and much more) This is the camera that you have been waiting for to create analog CCTV systems that produce astounding image clarity in a wide range of outdoor applications at the widest range of light levels.

ii. EHD730

Get incredible performance in bright light or low light, and the resolution listed in the specs from the actual camera you install. To take full advantage of the amazing resolution available from this advanced imaging technology, the EverFocus 960H Series EHD730 uses a vari-focal lens together with SONY Exview HAD 960H CCD II to produce in excess of 720 horizontal TV lines of resolution from each and 960H Series camera we deliver. Combined with a useable native low light sensitivity of 0.05lux without using digital slow shutter and **30 LEDs** with range of 30m/100feet or more, this camera truly provides color without compromise: over 720TVL resolution, Digital Wide Dynamic Range for clear color images in the most challenging of bright or unbalanced scene lighting conditions, plus true day/night IR enhanced images in low light with guaranteed ZERO ghosting. The EHD730 with its 3 Axis rotation design allows wall or ceiling mounting flexibility in an **IP66 weather resistant, vandal proof dome** housing. Your choice of vari-focal 2.8~12mm DC iris lens for easily adjustable field of view; Dual voltage operation and a full suite of OSD Menu and DSP functions controllable at the camera (DNR to save DVR HDD space, privacy masking, mirroring, and much more) This is the camera that you have been waiting for to create analog CCTV systems that produce astounding image clarity in a wide range of outdoor applications at the widest range of light levels.

The EHD700/730 supports both NTSC and PAL scanning systems.

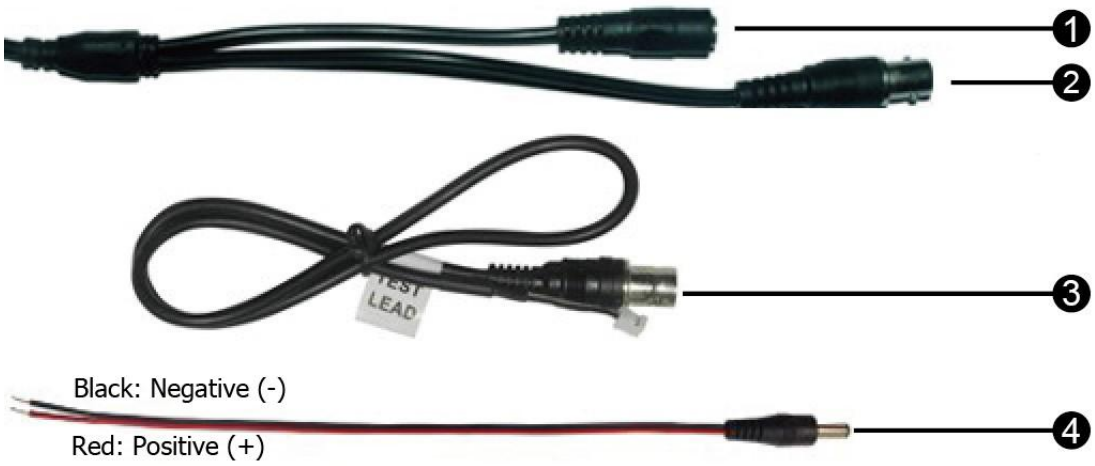
1.1 Packing List

- Camera Body x 1
- User Manual x 1
- Test Lead x 1
- Template Plate x 1
- Rubber Plate x 1
- Adapter Plate x 1
- Desiccant Bag x 1
- Screw x 4
- Screwdriver x 1
- Plastic Anchor x 4
- DC Power Pigtail Cable x 1
- Hexagon Wrench x 1
- Quick Installation Guide x 1

1.2 Features

- High resolution of over 720 horizontal TV lines for astounding image
- Exview HAD CCD II delivers amazing high sensitivity of 0.05lux – very low light sensitivity without DSS low light boost - Zero Ghosting guaranteed
- Vari-focal 2.8~12mm DC iris lens to captures the desired field of view
- 30 IR LEDs for 30m/100feet range -depending on scene IR reflectivity (**for EHD730**)
- Provides 2D- Noise Reduction to improve picture clarity while enabling DVRs to improve disk storage utilization
- Easy to use OSD setup menu
- Vandal resistant construction able to withstand intentional damage
- Digital Wide Dynamic Range expansion to deliver properly exposed images despite bright light sources, deep shadows and/or unbalanced lighting in the scene
- The flexible angle viewing with its 3 Axis rotation design allows wall or ceiling mounting
- IP66 weather resistance rating means that it will withstand the elements of outdoor conditions
- Convenient speedy-mount base plate easily attaches to surface, camera attaches to plate with machine screws

2. Cable Description

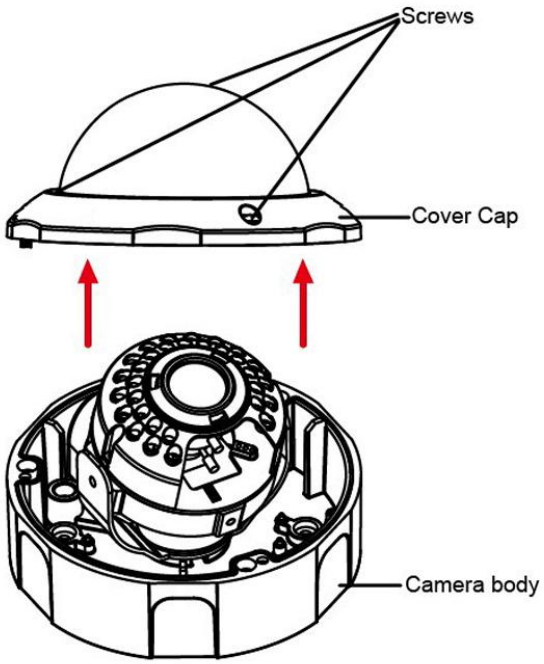


No.	Name	Descriptions
1	**Power Cable**	Connects to a 12VDC or 24VAC power source.
2	**Video Output**	Connects to a DVR or monitor, using a 75 Ohm BNC-type coaxial cable.
3	**Test Lead**	Connects to a monitor for setting image aim and focus.
4	**DC Power Pigtail Cable**	Optional power pigtail cable. The red wire is positive (+); while the black wire is negative (-).

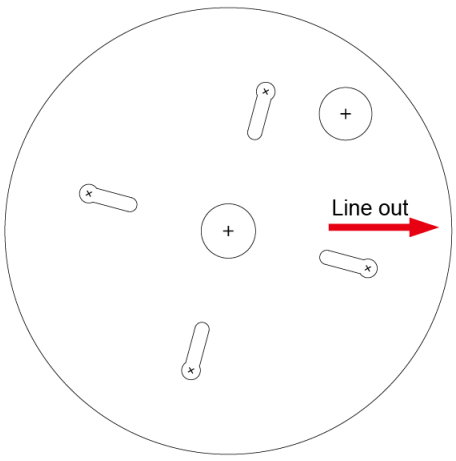
3. Installation

3.1 Installation and Adjustment

1. To remove the Cover Cap, unscrew the three Set Screws using the supplied Hexagon Wrench.

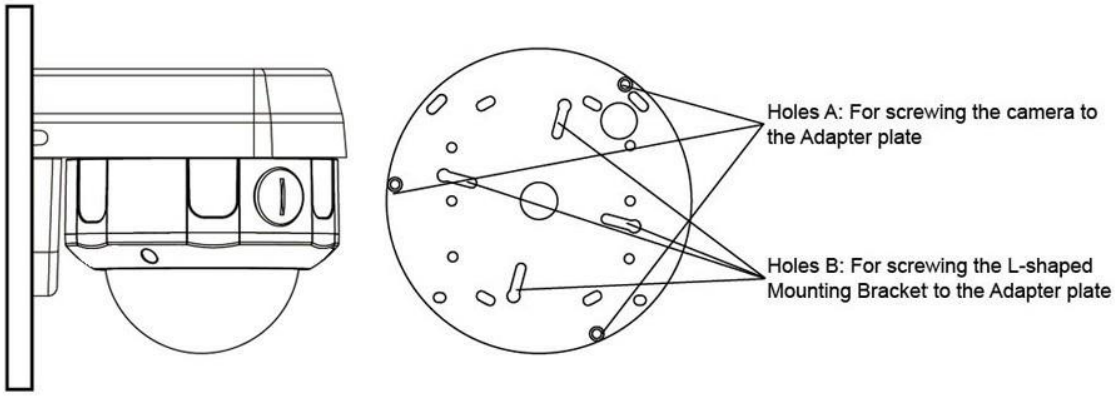


2. For Ceiling Mount / Wall Mount users: Stick the template plate on the position where you want to attach the camera, drill the four holes on the template plate for screwing the Adapter Plate with the supplied screws and anchors.
Drill either one of the circles in the template plate only if you want to wire the cables through the wall / ceiling. Insert the supplied four anchors into the holes.



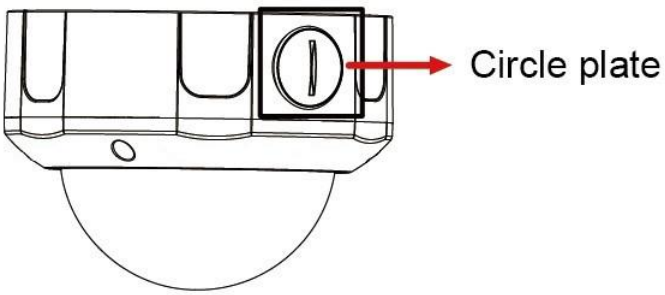
3. To screw the camera onto a Wiring Box or using a Bracket:

a. You can optionally screw the camera to the wall using an L-Shaped Mounting Bracket.
b. Screw the supplied Adapter Plate to the Wiring Box or the L-Shaped Mounting Bracket using the screw holes on the Adapter Plate. Note the holes A / B are designed for screwing the camera / L-Shaped Mounting Bracket.

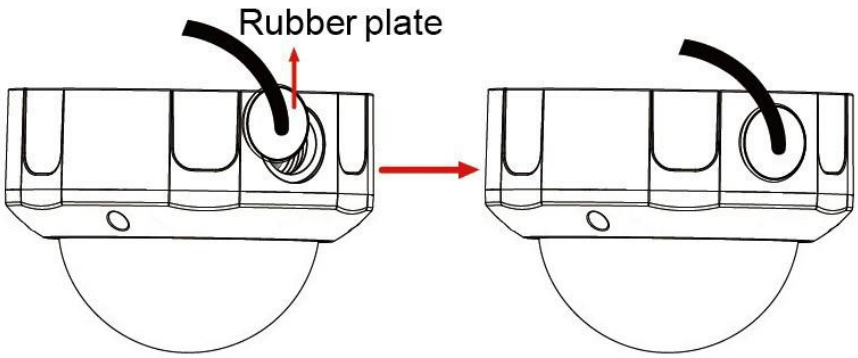

Holes A: For screwing the camera to the Adapter plate
Holes B: For screwing the L-shaped Mounting Bracket to the Adapter plate

4. If you want to wire the cable through the side of the camera, follow the steps below:

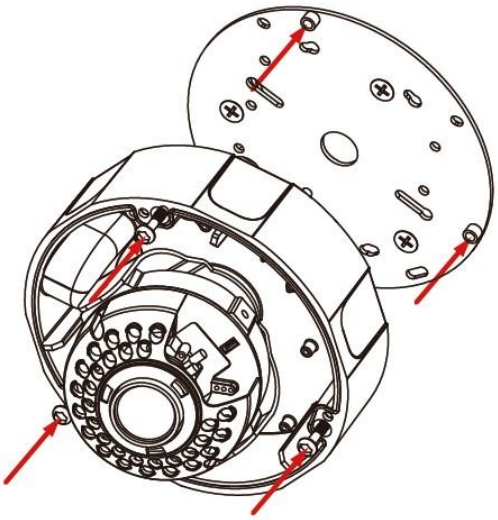
a. Remove the Circle Plate from the camera. You can simply loosen the Circle Plate using a coin.



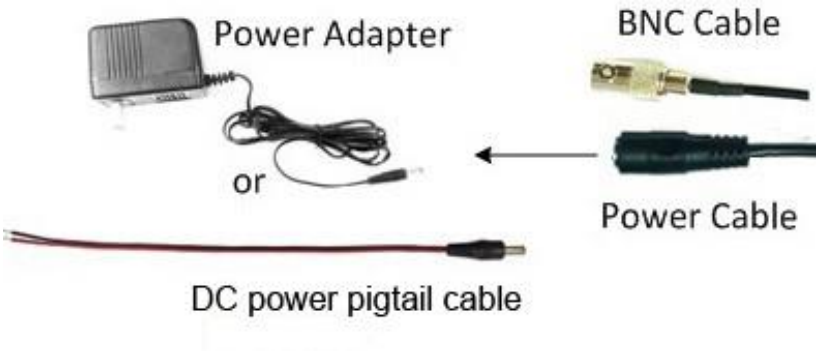
b. Run the cable through the Cable Conduit.
c. Use the supplied Rubber Plate to firm the cable and then tightly push the Rubber Plate to the Cable Conduit.



5. Screw the camera to the Adapter Plate.

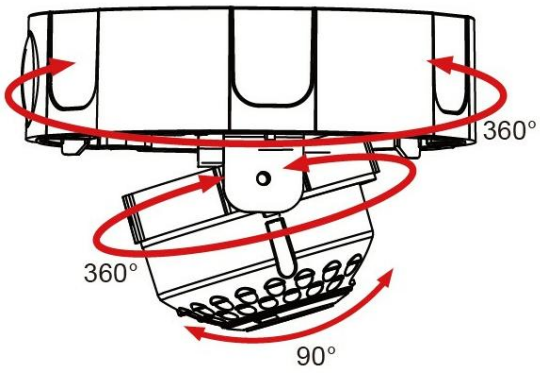


6. Connect the camera to the 12VDC or 24VAC power source using the supplied DC power pigtail cable or a power adapter.

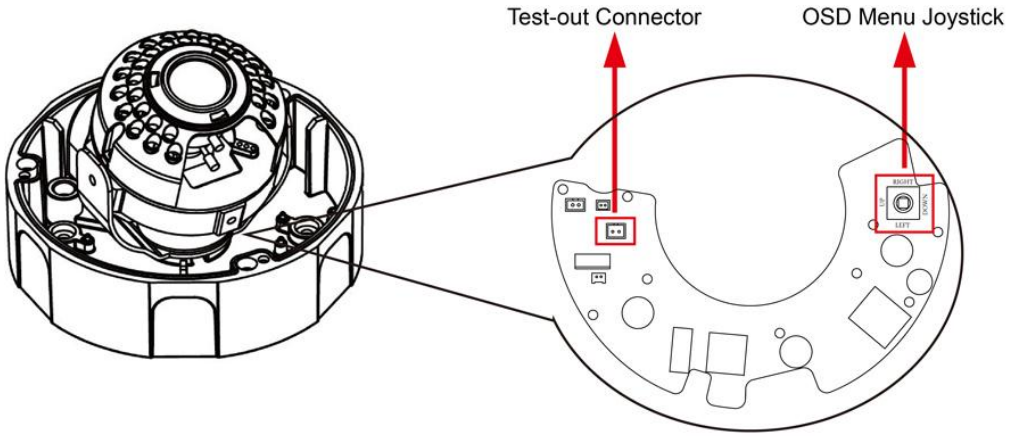


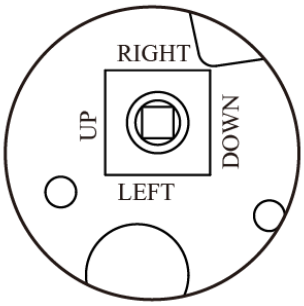
7. Connect the camera to a DVR or a portable monitor using the Test lead for viewing the camera view while adjusting camera angles. You can also use the OSD Menu Joystick to configure camera settings.

   a. Adjust camera angles by tilting or rotating the camera.



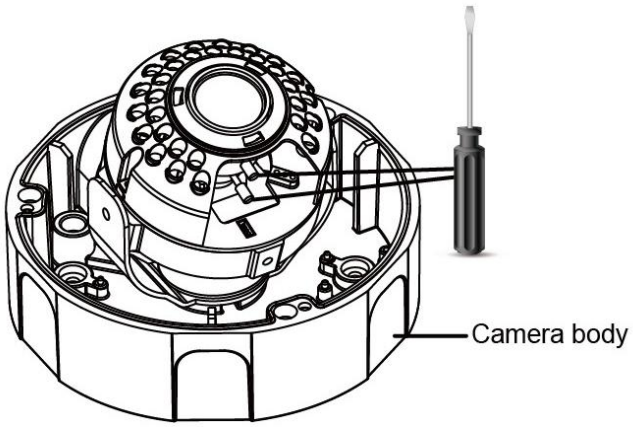
   b. To configure camera settings using the OSD Menu Joystick, connect one end of the Test lead to the Test-Out connector on the camera module and the other end to the portable monitor.





- Push the Joystick up / down to select among menu items.
- Push the Joystick left / right to adjust the level of the selected item.
- Press the Joystick to enter the submenu or exit the OSD Setup Menu.

8. Adjust the Zoom / Focus using the Zoom / Focus screws. Tighten the Zoom / Focus screws using the supplied Screwdriver.



9. Tear apart the outer packing (figure 1) to take out the Desiccant Bag (figure 2), then make it folded (figure 3) and put it into the camera housing (figure 4).

Figure 1

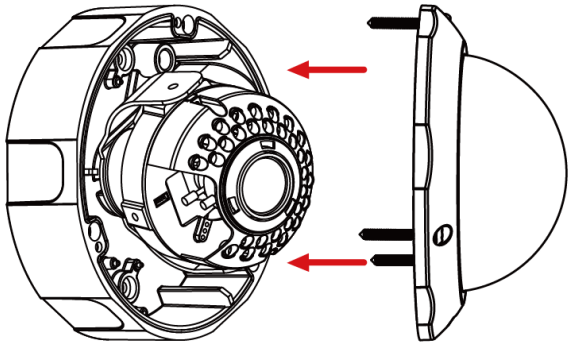
Figure 2

Figure 3

Figure 4

Note: It's recommended to close the cover cap immediately in case of reducing the absorption capacity of the desiccant bag inside the camera.

10. Screw back the Cover Cap Set Screw using the supplied Hexagon Wrench.



4. Configuration in the OSD Menu

You can use the Joystick on the rear panel of the camera to configure camera settings in the OSD menu. For details on the OSD menu structure as below:

No.	Main	Sub Menu	Sub Menu / Function		
1	Lens	Auto*	Type	DC*	
			Mode	AUTO*, Open, Close	
			Speed	0-255 (default=80)	
		Manual			
2	Shutter AGC	Auto*	High Luminance	Mode	Shut + Auto Iris, Auto Iris*
				Brightness	0-255 (default=24) <EHD700>
					0-255 (default=28) <EHD730>
			Low Luminance	Mode	AGC*, Off
				Brightness	x0.25, x0.50*, x0.75, x1.00
		Manual	Mode	Shut + AGC	
			Shutter	1/60*, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000	
			AGC	6.00*, 12.00, 18.00, 24.00, 30.00, 36.00, 42.00, 44.80	
3	White Balance	ATW*	Speed	0-255 (default=239)	
			Delay CNT	0-255 (default=16)	
			ATW Frame	x0.50, x1.0, x1.5, x2.0*	
			Environment	Indoor*, Outdoor	

		Push			
		User1	B-Gain	0-255 (default=29)	
			R-Gain	0-255 (default=34)	
		User2	B-Gain	0-255 (default=45)	
			R-Gain	0-255 (default=26)	
		Anti CR			
		Manual	Level	24-90 (default=58)	
		Push lock			
4	Back Light	Off* / BLC / HLC			
5	Picture Adjust	Mirror	Off* / On		
		Brightness	0-255 (default=0)		
		Contrast	0-255 (default=128)		
		Sharpness	0-255 (default=128)		
		Hue	0-255 (default=128)		
		Gain	0-255 (default=128) <EHD700>	0-255 (default=150) <EHD730>	
6	ATR	Off*			
		On	Luminance	Low, Mid*, High	
			Contrast	Low, Mid-low, Mid*, Mid-high, High	
7	Motion Detection	Off*			
		On	Detect Sense	0-127 (default=111)	
			Block Display	Off*/ On/Enable	
			Motion Area	Off*/ On	
			Area Select	1/4*, 2/4, 3/4, 4/4	
			Top / Bottom	0-244 (default=0)	
			Left / Right	0-474 (default=0)	
8	Privacy	Off*			
		On	Area Select	1/8*, 2/8, 3/8, 4/8,5/8, 6/8, 7/8, 8/8	
			Top / Bottom	0-244 (default=0)	
			Left / Right	0-474 (default=0)	
			Color	1-8 (default=1)	
			Transparent	0.00, 0.50, 0.75, *1.00	
			Mosaic	*Off / On	
9	Day/Night	EXT1*<EHD730>			
		EXT2			
		Auto*<EHD700>	Burst	Off*/On	
			Delay CNT	0-255 (default=004) <EHD700>	0-255 (default=003) <EHD730>
			Day→Night	0-255 (default=000)	0-255 (default=001)

				<EHD700>		<EHD730>
			Night→Day	0-255 (default=003) <EHD700>		0-255 (default=015) <EHD730>
		Color				
		B / W	Burst	Off*/ On		
			IR Optimizer	Off		
				On*	Mode	Auto*/ Center
					Level	0-31 (default=015)
10	NR	NR Mode	Off			
			Y/C*	Y Level	000-015 (default=003)	
				C Level	000-015 (default=003)	
11	Camera ID	Off*				
		On	English letters, numbers and 28 symbols			
12	Sync.	Int.				
13	Language	English*/ Japanese/German/French/Russian/Portuguese/Spanish Simplified Chinese				
14	Camera Reset					
15	Save all					

5. Specifications

P/N	EHD700		EHD730	
Pickup Device	1/3” Sony Exview HAD II 960H High Sensitivity Interline CCD			
Video Format	NTSC or PAL			
Picture Elements	1020 x 508 (NTSC) /1020 x 596 (PAL)			
Effective Pixels	976 x 494 (NTSC) / 976 x 582 (PAL)			
Scanning System	2:1 Interlace			
Horizontal Resolution	720+ TVL			
Sensitivity	0.05lux native from sensor		0lux with IR on 0.05lux native from sensor	
S/N Ratio	Over 50 dB (AGC OFF)			
Electronic Shutter	1/60(1/50)~1/100,000s			
Video Output	BNC 1.0Vp-p 75Ω			
Gamma Correction	0.45			
Lens Type	2.8-12mm DC Iris			
Lens Option	Vari-focal			
BLC	OFF/BLC/HS BLC Selectable			
Gain Control	Low light auto/bright light auto/manual selectable			
White Balance	ATW/One Push/User2/Anti-Crawl/Manual/Push Lock			
Sync Mode	Internal (Plus Anti- Chroma Crawl White Balance option)			
Day/Night	Auto		True D/N with ICR, Auto	
IR LED	N/A		30 Units	
IR Wave Length	N/A		850nm	
IR Distance	N/A		Up to 30m/100ft. (depending on scene IR reflectivity)	
OSD Menu	Multiple Functions			
OSD Languages	English/Spanish/Portuguese/German/Russian/Japanese/Chinese/French			
2DNR	On/Off			
ATR	On/Off (3 levels each adjustable for luminance and contrast)			
Wide Dynamic Range	On/Off (3 levels each adjustable for luminance and contrast)			
Mirror	On/Off			
Motion Detection	On/Off for 4 selectable zones (On screen indication on alarm)			
Privacy Mask	On/Off for 8 selectable zones			
Environmental	IP66 Weather Resistant			
Power Source	12VDC/24VAC			
Power Consumption	Heater Off	12VDC: 140mA, 2Wmax. 24VAC:4W max.	IR on	12VDC:370mA, 5W max. 24VAC:9.5W max.

	Heater On	12VDC:170mA, 2.5Wmax. 24VAC:5.5W max.	IR on Heater on	12VDC:420mA, 5.5Wmax. 24VAC:11W max.
Operating Temperature	-40°C~50°C / -40°F~122°F			
Humidity	Less than 80%			
Dimensions	140 x 102.5mm / 5.51" x 4.04"			
Weight	2.07lbs /940g		2.25lbs /1020g	
Certifications	CE/FCC/ RoHS			

Specifications and designs are subject to change for improving the functionality of this product without notice.

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This symbol means that electrical and electronic equipment, at their end-of-life, should be disposed ofseparately from your household waste.
Please, dispose of this equipment at your local community waste collection/recycling centre.
In the European Union there are separate collection systems for used electrical and electronic product.
Please, help us to conserve the

Ihr EverFocus Produkt wurde entwickelt und hergestellt mit qualitativ hochwertigen Materialien und Komponenten, die recycelt und wieder verwendet werden können.
Dieses Symbol bedeutet, dass elektrische und elektronische Geräte am Ende ihrer Nutzungsdauer vom Hausmüll getrennt entsorgt werden sollen.
Bitte entsorgen Sie dieses Gerät bei Ihrer örtlichen kommunalen Sammelstelle oder im Recycling Centre.
Helfen Sie uns bitte, die Umwelt zu erhalten, in der wir leben.

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